

We claim:

- 1           1.     A power distribution system comprising:  
2           a bank of sources including a first group of sources and a second group of  
3           sources;  
4           a bank of loads; and  
5           an interconnect arrangement including a plurality of interconnects, the  
6           interconnects connecting each load to one or more sources of both the first and  
7           second groups of sources so as to be fully powered by sources of both the first and  
8           second groups of sources and such that if any one source or all sources of one of the  
9           groups of sources fails, all of the loads remain fully powered.
- 1           2.     The system of claim 1 wherein the sources, interconnects, and loads  
2           are dividable into subsystems, wherein each subsystem includes four X watt loads,  
3           two 2X watt first group sources and one 4X watt second group source, and wherein  
4           two of the X watt loads are connected to a common one of the 2X watt first group  
5           sources, another two of the loads are connected to another one of the 2X watt first  
6           group sources, and wherein all of the X watt loads are connected to the 4X watt  
7           second group source.
- 1           3.     The system of claim 1 wherein the sources, interconnects, and loads  
2           are dividable into subsystems, wherein each subsystem includes two 2X watt loads,  
3           two 2X watt first group sources and one 4X watt second group source, and wherein  
4           each of the 2X watt loads are connected to a different one of the 2X watt first group  
5           sources and to the 4X watt second group source.
- 1           4.     The system of claim 1 wherein the sources, interconnects, and loads  
2           are dividable into subsystems, wherein each subsystem includes one 4X watt loads,  
3           two 2X watt first group sources and one 4X watt second group source, and wherein  
4           the 4X watt load is connected to the 2X watt first group sources and to the 4X watt  
5           second group source.
- 1           5.     The system of claim 1 wherein the sources, interconnects, and loads  
2           include two 6X watt loads, six 2X watt first group sources and three 4X watt second  
3           group sources, and wherein each of the 6X watt loads is connected to a common one

4 and a unique one of the 4X watt second group sources, and to a unique three source  
5 subgroup of the 2X watt first group sources.

1 6. The system of claim 1 wherein the sources, interconnects, and loads  
2 include one 12X watt load, six 2X watt first group sources and three 4X watt second  
3 group source, and wherein the 12X watt load is connected to all of the 2X watt first  
4 group sources and all of the 4X watt second group sources.

1 7. The system of claim 1 wherein the first group of sources are AC  
2 sources.

1 8. The system of claim 1 wherein the AC sources each provide a DC  
2 voltage with a one thousand watt capacity.

1 9. The system of claim 1 wherein the second group of sources are DC  
2 sources.

1 10. The system of claim 9 wherein the DC sources each provide battery  
2 voltage with a two thousand watt capacity.

1 11. A power distribution system comprising:  
2 a bank of sources including a group of AC sources and a group of DC  
3 sources;  
4 a bank of loads; and  
5 a plurality of interconnects that connect each load to one or more sources of  
6 both the group of AC sources and the group of DC sources to be fully powered by  
7 sources of both the group of AC sources and the group of DC sources and such that  
8 if any one or more sources of either the group of AC sources or the group of DC  
9 sources fails, all of the loads will remain fully powered.

1 12. The system of claim 11 wherein the sources, interconnects, and loads  
2 are dividable into subsystems, wherein each subsystem includes four X watt loads,  
3 two 2X watt AC sources and one 4X watt DC source, and wherein two of the X watt  
4 loads are connected to a common one of the 2X watt AC sources, another two of the  
5 loads are connected to another one of the 2X watt AC sources, and wherein all of the  
6 X watt loads are connected to the 4X watt DC source.

1           13.    The system of claim 12 wherein the system consists of three of the  
2 subsystems.

1           14.    The system of claim 11 wherein the sources, interconnects, and loads  
2 are dividable into subsystems, wherein each subsystem includes two 2X watt loads,  
3 two 2X watt AC sources and one 4X watt DC source, and wherein each of the 2X  
4 watt loads is connected to a different one of the 2X watt AC sources and to the 4X  
5 watt DC source.

1           15.    The system of claim 14 wherein the system consists of three  
2 subsystems.

1           16.    The system of claim 11 wherein the sources, interconnects, and loads  
2 are dividable into subsystems, wherein each subsystem includes one 4X watt load,  
3 two 2X watt AC sources and one 4X watt DC source, and wherein the 4X watt load is  
4 connected to the 2X watt AC sources and to the 4X watt DC source.

1           17.    The system of claim 16 wherein the system consists of three of the  
2 subsystems.

1           18.    The system of claim 11 wherein the sources, interconnects, and loads  
2 include two 6X watt loads, six 2X watt AC sources and three 4X watt DC sources,  
3 and wherein each of the 6X watt loads is connected to a common one and a unique  
4 one of the 4X watt DC sources, and to a unique three source subgroup of the 2X watt  
5 AC sources.

1           19.    The system of claim 11 wherein the sources, interconnects, and loads  
2 include one 12X watt load, six 2X watt AC sources and three 4X watt DC sources,  
3 and wherein the 12X watt load is connected to all of the 2X watt AC sources and all  
4 of the 4X watt DC sources.

1           20.    The system of claim 11 wherein the AC sources each converts AC  
2 voltage to DC voltage with a one thousand watt capacity.

1           21.    The system of claim 11 wherein the DC sources each provide a battery  
2 DC voltage with a two thousand watt capacity.

- 1           22.    A method of distributing power to a bank of loads comprising:
- 2           providing a bank of sources including a first group of sources and a second
- 3 group of sources;
- 4           providing a plurality of interconnects; and
- 5           with the interconnects, connecting each load to one or more sources of both
- 6 the first and second groups of sources to enable sources of both the first and second
- 7 groups of sources to fully power the loads and such that if any one or more of the
- 8 sources of one of the groups of sources fails, all of the loads remain fully powered.